

Acid Sulfate Soils Design Implications – Examples from Shell Cove Boatharbour

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Shell Cove Boatharbour



BOARDWALK
 MARINA
 TOWN CENTRE
 BOAT LAUNCHING AND MAINTENANCE FACILITIES
 BREAKWATER
 GROUYNE

SYDNEY
 WOLLONGONG
 SHELL COVE
 JERVIS BAY

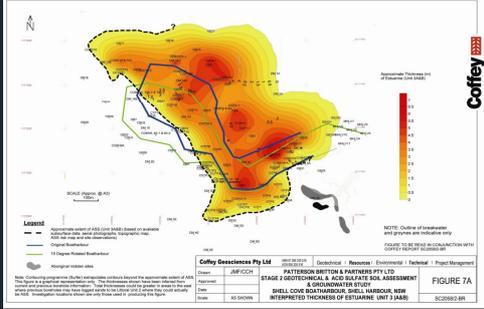
Acid Sulfate Soils (ASS)

- Soil and sediment containing iron sulfides
- Found in every coastal estuary and embayment in NSW
- When these soils are disturbed and exposed to the atmosphere, oxidation may ultimately result in sulfuric acid presence and $\text{pH} < 4$
- **Actual Acid Sulfate Soil (AASS)**
- **Potential Acid Sulfate Soil (PASS)**

Acid Sulfate Soil Design Considerations

- Locate structures away from the ASS (where possible)
- Soft nature of ASS can affect stability and foundation requirements
- Management plans and mitigation measures to minimise environmental impacts
- Durability of structures in contact with ASS or exposed to low pH water.

Avoidance of Acid Sulfate Soil – Rotation of Boatharbour (15')



Acid Sulfate Soils (ASS) Management

- Prevent oxidation – keep material moist and minimise stockpiling
- Reliably determine interface between PASS and AASS
- ASS can be disposed of either by:
 - reburial below the Boatharbour floor capped with clean sand
 - neutralised and reused, or
 - disposed at a licensed landfill site for PASS
- Prevent draw-down from adversely impacting ASS
- Monitor soil, water and groundwater pH.

Buried Acid Sulfate Soils

